



July 2, 2021

Mr. Austin F. Callwood, Director
Division of Environmental Protection
Department of Planning & Natural Resources
45 Mars Hill
Frederiksted, V.I. 00840-4474

**SUBJECT: EPCRA Follow-up Report – Release Dates: April 30, 2021 – May 2, 2021
East Fuel Gas System and EPCRA Notifications – Intermittently from
December 31, 2020 to May 9, 2021**

Dear Mr. Callwood:

The Department of Planning and Natural Resources (DPNR) was notified by email dated May 1, 2021, at 12:10hrs of Sulfur Dioxide (SO₂) releases to the atmosphere from the combustion units that combust fuel gas. This correspondence is the written follow-up report required under 40 CFR Part 355.40 Emergency Release Notification. The reportable quantity (RQ) of SO₂ is 500 pounds.

This letter also notifies EPA and DPNR under EPCRA for emissions from the East Fuel Gas system between December 31, 2020 and May 9, 2021. During a review of measured and reported data, calculations for fuel gas consuming units (heaters and boilers) revealed that some periods of excess H₂S in the fuel gas, although reported to DPNR as fuel gas exceedances under NSPS Subpart J, were not reported under EPCRA.

SO₂ is considered an Extremely Hazardous Substance (EHS) pursuant to 40 CFR 355 Appendix A and subsequent notification of the LEPC and SERC is required under the Emergency Planning and Community Right to Know Act (EPCRA). As previously mentioned, Limetree Bay believes the LEPC is not a functioning Committee and therefore is sending this report to DPNR. Limetree is also sending this report to EPA per EPA's request.

Owner and Facility Information

Limetree Bay Refining, LLC
1 Estate Hope
Christiansted VI 00820-5652
(340) 692-3000

Description and Time of the April 30 to May 2, 2021 Incident

On April 29th, the Coker unit was starting up and feeding product to the Nos. 7 and 9 Distillate Desulfurizer Units (DD7 and DD9). The off gas from the stripper receivers at 7DD and 9DD was then routed to the gas recovery unit for treatment which added extra load to the No. 4 Amine Regeneration Unit (4ARU). At that time, 4ARU was already impacted from previous hydrocarbon contamination. With 4ARU overwhelmed it reduced the unit's ability to remove H₂S from the fuel gas.

The rolling total SO₂ mass emissions measured by the CMS was in excess of 500 pounds in a 24-hour rolling period above the allowable emissions level starting and ending on the time periods identified below.

Start Time	End Time
April 30, 2021 0:00	May 2, 2021 06:59

Actions Taken to Respond to Contain the Release

Operations worked on reducing the H₂S in the fuel gas by normalizing the pressure in the clean acid gas (CAG) header so that the CAG from 4ARU could be routed to the No. 4 Sulfur Recovery Unit (4SRU). The amine circulation to gas flow rate ratio was found to be off target and was adjusted. Reflux rates and overhead levels in 4ARU were also off target and adjusted. Operations continued skimming hydrocarbon and added fresh amine solution to 4ARU to increase the H₂S removal efficiency.

On May 1st, Operations brought the No. 5 Amine Regeneration Unit (5ARU) online to reduce the load on 4ARU. 5ARU was not online sooner because it was down for maintenance. Feed was pulled from the No. 6 Distillate Desulfurizer Unit (DD6), DD7, and DD9 and the units were placed on circulation. Throughputs at the No. 3 Vacuum Unit (3VAC) and No.5 Crude Unit (5CDU) were reduced.

Name and Quantity Released

The following quantities of SO₂ were released on the calendar dates when the RQ for SO₂ was exceeded for any 24-hour rolling period during the calendar day:

Calendar Date	SO ₂ lbs Released
April 30, 2021	2115
May 1, 2021	2948
May 2, 2021	88

Note: During time periods when the H₂S CMS or fuel flow meters were inoperative, engineering estimates were used to quantify the SO₂ lbs released.

Any Known or Anticipated Acute or Chronic Health Risks

Limetree Bay Refining, LLC has no knowledge of, nor does it anticipate, any acute or chronic health risks associated with these releases. Limetree Bay Refining, LLC is aware of certain media reports and individual accounts involving concerns of potential adverse health effects. However, Limetree Bay Refining, LLC has no information at this time that would validate those concerns.

Medical Attention for Exposed Individuals

Limetree Bay Refining, LLC is unaware of any known medical attention for exposed individuals associated with these releases.

NOTICE OF INCIDENTS BETWEEN DECEMBER 31, 2020 AND MAY 9, 2021

The following periods were in exceedance of the 500lbs of SO₂ notification threshold when adding all heaters and boilers together.

Description and Time of the Incidents

Please see attached followup letters to DPNR for descriptions.

Start Time	End Time
December 31, 2020 19:00	January 1, 2021 12:59
January 10, 2021 04:00	January 11, 2021 04:59
January 14, 2021 20:00	January 23, 2021 04:59
January 25, 2021 00:00	January 25, 2021 15:59
January 27, 2021 07:00	January 28, 2021 11:59
January 29, 2021 17:00	January 29, 2021 17:59
January 29, 2021 22:00	January 29, 2021 22:59
February 1, 2021 04:00	February 2, 2021 07:59
February 4, 2021 05:00	February 5, 2021 18:59
February 8, 2021 18:00	February 9, 2021 23:59
February 12, 2021 08:00	February 13, 2021 11:59
February 16, 2021 18:00	February 17, 2021 09:59
April 20, 2021 07:00	April 22, 2021 00:59
April 22, 2021 13:00	April 24, 2021 14:59
May 5, 2021 18:00	May 6, 2021 14:59
May 9, 2021 01:00	May 9, 2021 05:59

Actions Taken to Respond to Contain the Releases

Please see attached followup letters to DPNR.

Name and Quantity Released

The following quantities of SO₂ were released on the calendar dates when the RQ for SO₂ was exceeded for any 24-hour rolling period during the calendar day:

Calendar Date	SO₂ lbs Released
December 31, 2021	604
January 1, 2021	33
January 10, 2021	1482
January 11, 2021	818
January 14, 2021	1325
January 15, 2021	1984
January 16, 2021	1241
January 17, 2021	2296
January 18, 2021	2500
January 19, 2021	2009
January 20, 2021	1642
January 21, 2021	2211
January 22, 2021	1609
January 23, 2021	466
January 25, 2021	625
January 27, 2021	1565

January 28, 2021	1022
January 29, 2021	1374
February 1, 2021	1901
February 2, 2021	847
February 4, 2021	3277
February 5, 2021	704
February 8, 2021	1840
February 9, 2021	1026
February 12, 2021	2256
February 13, 2021	334
February 16, 2021	1138
February 17, 2021	59
April 20, 2021	4355
April 21, 2021	1623
April 22, 2021	2369
April 23, 2021	4818
April 24, 2021	0
May 5, 2021	1145
May 6, 2021	846
May 9, 2021	779

Note: During time periods when the SO₂ CEMS or flow monitor was inoperative, engineering estimates were used to quantify the SO₂ lbs released.

Any Known or Anticipated Acute or Chronic Health Risks

Limetree Bay Refining, LLC has no knowledge of, nor does it anticipate, any acute or chronic health risks associated with these releases. Limetree Bay Refining, LLC is aware of certain media reports and individual accounts involving concerns of potential adverse health effects. However, Limetree Bay Refining, LLC has no information at this time that would validate those concerns.

Medical Attention for Exposed Individuals

Limetree Bay Refining, LLC is unaware of any known medical attention for exposed individuals associated with these releases.

Based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate, and complete.

If you have any questions or need additional information, please contact Catherine Elizee of my staff at (340) 692-3073.

Sincerely,



Neil Morgan
VP, Refinery and General Manager
Limetree Bay Refining, LLC

cc via email: Verline Marcellin (DPNR)
Harish Patel (EPA)
Patrick Foley (EPA)
Robert Buettner (EPA)



January 15, 2021

Mr. Austin F. Callwood, Director
Division of Environmental Protection
Department of Planning & Natural Resources
45 Mars Hill
Frederiksted, V.I. 00840-4474

SUBJECT: East Fuel Gas H₂S Exceedance – January 9-11, 2021

Dear Mr. Callwood:

This letter is submitted in compliance with Condition No. 2.4.5.1 of Limetree Bay Title V permit as a follow-up to the email notification to Ms. Verline Marcellin of the Division of Environmental Protection on Saturday, January 9, 2021 regarding the H₂S exceedances at the east fuel gas system.

The Continuous Emissions Monitoring System (CEMS) recorded H₂S concentrations in the fuel gas in excess of 0.1 gr/dscf (162 ppm) based on a 3-hr rolling average (ref. Title V permit condition 3.2.2.1.11) from Saturday, January 9, 2021 to Monday, January 11, 2021.

The following table provides 3-hr H₂S concentrations in the east fuel gas system during the exceedance event.

Source			Source			Source		
Parameter		EASTFGDR	Parameter		EASTFGDR	Parameter		EASTFGDR
Unit		H2SPPM (PPM)	Unit		H2SPPM (PPM)	Unit		H2SPPM (PPM)
01/09/21	14:00	63	01/10/21	08:00	472	01/11/21	02:00	241
01/09/21	15:00	103	01/10/21	09:00	405	01/11/21	03:00	251
01/09/21	16:00	160	01/10/21	10:00	384	01/11/21	04:00	224
01/09/21	17:00	253	01/10/21	11:00	312	01/11/21	05:00	185
01/09/21	18:00	332	01/10/21	12:00	257	01/11/21	06:00	153
01/09/21	19:00	325	01/10/21	13:00	199	01/11/21	07:00	166
01/09/21	20:00	354	01/10/21	14:00	192	01/11/21	08:00	187
01/09/21	21:00	366	01/10/21	15:00	227	01/11/21	09:00	193
01/09/21	22:00	402	01/10/21	16:00	264	01/11/21	10:00	216
01/09/21	23:00	421	01/10/21	17:00	278	01/11/21	11:00	278
01/10/21	00:00	421	01/10/21	18:00	211	01/11/21	12:00	307
01/10/21	01:00	398	01/10/21	19:00	199	01/11/21	13:00	325
01/10/21	02:00	375	01/10/21	20:00	245	01/11/21	14:00	319
01/10/21	03:00	365	01/10/21	21:00	276	01/11/21	15:00	342
01/10/21	04:00	417	01/10/21	22:00	300	01/11/21	16:00	289
01/10/21	05:00	521	01/10/21	23:00	253	01/11/21	17:00	172
01/10/21	06:00	598	01/11/21	00:00	254	01/11/21	18:00	69
01/10/21	07:00	553	01/11/21	01:00	234	01/11/21	19:00	22

During the exceedance event from January 9, 2021 to January 11, 2021, the No. 4 Amine Unit continued to struggle with hydrocarbon contamination. The backup unit to the No. 4 Amine Unit is the No. 5 Amine Unit. However, the reboiler at the No. 5 Amine Unit developed a leak causing the unit to be unavailable. As a result, the No. 4 Amine Unit was unable to efficiently remove the H₂S from the fuel gas.



We continue to skim the hydrocarbons from the No. 4 Amine Unit. Additionally, we are working on implementing physical changes in the configuration of the amine systems so that light hydrocarbons do not enter the amine systems. The reboiler at the No. 5 Amine Unit has been repaired.

If you have any questions or need additional information, please contact Maria Aloyo at (340) 692-3781.

Sincerely,

for Jeffrey E. Rinker
CEO
Limetree Bay Ventures, LLC

Electronic copy: Verline Marcellin (DPNR)



January 30, 2021

Mr. Austin F. Callwood, Director
Division of Environmental Protection
Department of Planning & Natural Resources
45 Mars Hill
Frederiksted, V.I. 00840-4474

SUBJECT: East Fuel Gas H₂S Exceedance – January 21, 2021 – January 30, 2021

Dear Mr. Callwood:

This letter is submitted in compliance with Condition No. 2.4.5.1 of Limetree Bay Title V permit as a follow-up to the email notifications to Ms. Verline Marcellin of the Division of Environmental Protection on the following dates regarding H₂S exceedance at the east fuel gas system.

- Saturday, January 23, 2021 at 1:39 PM
- Sunday, January 24, 2021 at 5:02 AM and 6:18 PM
- Tuesday, January 26, 2021 at 8:38 AM and 5:55 PM

The Continuous Emissions Monitoring System (CEMS) recorded periods of H₂S concentrations in the fuel gas in excess of 0.1 gr/dscf (162 ppm) based on a 3-hr rolling average (ref. Title V permit condition 3.2.2.1.10) since the submittal of the letter named “East Fuel Gas H₂S Exceedance – January 14, 2021 – Ongoing”, submitted on January 21, 2021.

The following table provides 3-hr H₂S concentrations in the east fuel gas system from January 21, 2021 to January 30, 2021.

Source			Source			Source		
Parameter		EASTFGDR	Parameter		EASTFGDR	Parameter		EASTFGDR
Unit		H2SPPM (PPM) 3-HR	Unit		H2SPPM (PPM) 3-HR	Unit		H2SPPM (PPM) 3-HR
01/21/21	00:00	322	01/21/21	19:00	525	01/22/21	15:00	323
01/21/21	01:00	343	01/21/21	20:00	485	01/22/21	16:00	315
01/21/21	02:00	396	01/21/21	21:00	461	01/22/21	17:00	302
01/21/21	03:00	413	01/21/21	22:00	444	01/22/21	18:00	295
01/21/21	04:00	398	01/21/21	23:00	441	01/22/21	19:00	284
01/21/21	05:00	348	01/22/21	00:00	446	01/22/21	20:00	278
01/21/21	06:00	358	01/22/21	01:00	490	01/22/21	21:00	279
01/21/21	07:00	371	01/22/21	02:00	513	01/22/21	22:00	231
01/21/21	08:00	371	01/22/21	03:00	561	01/22/21	23:00	152
01/21/21	09:00	341	01/22/21	04:00	558	01/23/21	00:00	92
01/21/21	10:00	329	01/22/21	05:00	578	01/23/21	01:00	92
01/21/21	11:00	316	01/22/21	06:00	537	01/23/21	02:00	125
01/21/21	12:00	349	01/22/21	07:00	459	01/23/21	03:00	149
01/21/21	13:00	410	01/22/21	08:00	402	01/23/21	04:00	150
01/21/21	14:00	498	01/22/21	09:00	377	01/23/21	05:00	139
01/21/21	15:00	547	01/22/21	10:00	399	01/23/21	06:00	125
01/21/21	16:00	592	01/22/21	11:00	389	01/23/21	07:00	130
01/21/21	17:00	602	01/22/21	12:00	363	01/23/21	08:00	134
01/21/21	18:00	577	01/22/21	13:00	338	01/23/21	09:00	135
			01/22/21	14:00	330	01/23/21	10:00	143



LIMETREE BAY REFINING, LLC

Source		EASTFGDR	
Parameter	Unit	H2SPPM (PPM)	3-HR
01/23/21	11:00	167	
01/23/21	12:00	156	
01/23/21	13:00	167	
01/23/21	14:00	160	
01/23/21	15:00	148	
01/23/21	16:00	91	
01/23/21	17:00	37	
01/23/21	18:00	35	
01/23/21	19:00	44	
01/23/21	20:00	53	
01/23/21	21:00	36	
01/23/21	22:00	20	
01/23/21	23:00	15	
01/24/21	00:00	43	
01/24/21	01:00	125	
01/24/21	02:00	201	
01/24/21	03:00	259	
01/24/21	04:00	250	
01/24/21	05:00	204	
01/24/21	06:00	123	
01/24/21	07:00	53	
01/24/21	08:00	21	
01/24/21	09:00	24	
01/24/21	10:00	34	
01/24/21	11:00	41	
01/24/21	12:00	48	
01/24/21	13:00	44	
01/24/21	14:00	49	
01/24/21	15:00	109	
01/24/21	16:00	191	
01/24/21	17:00	324	
01/24/21	18:00	361	
01/24/21	19:00	390	
01/24/21	20:00	367	
01/24/21	21:00	463	
01/24/21	22:00	532	
01/24/21	23:00	575	
01/25/21	00:00	572	
01/25/21	01:00	576	
01/25/21	02:00	486	
01/25/21	03:00	283	
01/25/21	04:00	87	

Source		EASTFGDR	
Parameter	Unit	H2SPPM (PPM)	3-HR
01/25/21	05:00	6	
01/25/21	06:00	1	
01/25/21	07:00	0	
01/25/21	08:00	0	
01/25/21	09:00	0	
01/25/21	10:00	0	
01/25/21	11:00	0	
01/25/21	12:00	0	
01/25/21	13:00	0	
01/25/21	14:00	0	
01/25/21	15:00	0	
01/25/21	16:00	40	
01/25/21	17:00	150	
01/25/21	18:00	240	
01/25/21	19:00	274	
01/25/21	20:00	233	
01/25/21	21:00	226	
01/25/21	22:00	221	
01/25/21	23:00	215	
01/26/21	00:00	174	
01/26/21	01:00	127	
01/26/21	02:00	98	
01/26/21	03:00	85	
01/26/21	04:00	90	
01/26/21	05:00	81	
01/26/21	06:00	77	
01/26/21	07:00	71	
01/26/21	08:00	156	
01/26/21	09:00	226	
01/26/21	10:00	282	
01/26/21	11:00	236	
01/26/21	12:00	243	
01/26/21	13:00	226	
01/26/21	14:00	271	
01/26/21	15:00	277	
01/26/21	16:00	317	
01/26/21	17:00	292	
01/26/21	18:00	282	
01/26/21	19:00	273	
01/26/21	20:00	231	
01/26/21	21:00	216	
01/26/21	22:00	175	

Source		EASTFGDR	
Parameter	Unit	H2SPPM (PPM)	3-HR
01/26/21	23:00	172	
01/27/21	00:00	165	
01/27/21	01:00	233	
01/27/21	02:00	283	
01/27/21	03:00	308	
01/27/21	04:00	295	
01/27/21	05:00	304	
01/27/21	06:00	283	
01/27/21	07:00	267	
01/27/21	08:00	254	
01/27/21	09:00	257	
01/27/21	10:00	259	
01/27/21	11:00	261	
01/27/21	12:00	272	
01/27/21	13:00	275	
01/27/21	14:00	280	
01/27/21	15:00	281	
01/27/21	16:00	288	
01/27/21	17:00	321	
01/27/21	18:00	316	
01/27/21	19:00	310	
01/27/21	20:00	285	
01/27/21	21:00	294	
01/27/21	22:00	303	
01/27/21	23:00	313	
01/28/21	00:00	322	
01/28/21	01:00	319	
01/28/21	02:00	236	
01/28/21	03:00	183	
01/28/21	04:00	149	
01/28/21	05:00	207	
01/28/21	06:00	244	
01/28/21	07:00	322	
01/28/21	08:00	371	
01/28/21	09:00	301	
01/28/21	10:00	155	
01/28/21	11:00	22	
01/28/21	12:00	7	
01/28/21	13:00	10	
01/28/21	14:00	10	
01/28/21	15:00	22	
01/28/21	16:00	22	



Source	Parameter Unit	EASTFGDR H2SPPM (PPM) 3-HR
01/28/21 17:00		22
01/28/21 18:00		170
01/28/21 19:00		170
01/28/21 20:00		170
01/28/21 21:00		170
01/28/21 22:00		170
01/28/21 23:00		170
01/29/21 00:00		170
01/29/21 01:00		170
01/29/21 02:00		170
01/29/21 03:00		170
01/29/21 04:00		248

Source	Parameter Unit	EASTFGDR H2SPPM (PPM) 3-HR
01/29/21 05:00		301
01/29/21 06:00		301
01/29/21 07:00		301
01/29/21 08:00		301
01/29/21 09:00		301
01/29/21 10:00		301
01/29/21 11:00		301
01/29/21 12:00		301
01/29/21 13:00		301
01/29/21 14:00		301
01/29/21 15:00		248
01/29/21 16:00		280

Source	Parameter Unit	EASTFGDR H2SPPM (PPM) 3-HR
01/29/21 17:00		340
01/29/21 18:00		331
01/29/21 19:00		302
01/29/21 20:00		243
01/29/21 21:00		234
01/29/21 22:00		217
01/29/21 23:00		197
01/30/21 00:00		197
01/30/21 01:00		161
01/30/21 02:00		150

We continue to have issues at the No. 5 Amine Regeneration Unit (5ARU). Acid gas generated at 5ARU is vented to the No.4 Sulfur Recovery Unit (4SRU) via the acid gas header. When the 4SRU is unable to accept the acid gas, the header builds pressure causing the acid gas to vent back to the 5ARU. This creates upset conditions at 5ARU reducing its ability to remove H₂S from the fuel gas. Becht Engineering has been assisting in providing technical guidelines and recommendations to optimize the operation of the gas treating units.

We are committed to resolving these issues as expeditiously as possible and bringing the units back into compliance during this Restart period.

If you have any questions or need additional information, please contact Maria Aloyo at (340) 692-3781.

Sincerely,

Robert Weldzius
Senior Vice President
Limetree Bay Refining, LLC

Electronic copy: Verline Marcellin (DPNR)



February 6, 2021

Mr. Austin F. Callwood, Director
Division of Environmental Protection
Department of Planning & Natural Resources
45 Mars Hill
Frederiksted, V.I. 00840-4474

SUBJECT: East Fuel Gas H₂S Exceedance – January 30 – February 5, 2021

Dear Mr. Callwood:

This letter is submitted in compliance with Condition No. 2.4.5.1 of Limetree Bay Title V permit as a follow-up to the email notifications to Ms. Verline Marcellin of the Division of Environmental Protection on the following dates regarding the H₂S exceedances at the east fuel gas system.

- Saturday, January 30, 2021 at 3:00 PM
- Sunday, January 31, 2021 at 3:30 PM
- Monday, February 1, 2021 at 8:55 AM
- Thursday, February 4, 2021 at 4:16 PM

The Continuous Emissions Monitoring System (CEMS) recorded H₂S concentrations in the fuel gas in excess of 0.1 gr/dscf (162 ppm) based on a 3-hr rolling average (ref. Title V permit condition 3.2.2.1.10) intermittently starting on Sunday, January 30, 2021 through Thursday, February 4, 2021.

The following table provides 3-hr H₂S data during the exceedance events.

Source		EASTFGDR	
Parameter	Unit	H ₂ SPPM	(PPM)
01/30/21	00:00	197	
01/30/21	01:00	161	
01/30/21	02:00	150	
01/30/21	03:00	151	
01/30/21	04:00	161	
01/30/21	05:00	156	
01/30/21	06:00	143	
01/30/21	07:00	153	
01/30/21	08:00	181	
01/30/21	09:00	210	
01/30/21	10:00	222	
01/30/21	11:00	212	
01/30/21	12:00	191	
01/30/21	13:00	120	
01/30/21	14:00	109	
01/30/21	15:00	158	
01/30/21	16:00	233	
01/30/21	17:00	223	
01/30/21	18:00	213	
01/30/21	19:00	203	
01/30/21	20:00	220	
01/30/21	21:00	178	
01/30/21	22:00	183	
01/30/21	23:00	192	
01/31/21	00:00	207	
01/31/21	01:00	200	
01/31/21	02:00	179	
01/31/21	03:00	170	
01/31/21	04:00	199	
01/31/21	05:00	255	
01/31/21	06:00	308	
01/31/21	07:00	280	
01/31/21	08:00	195	
01/31/21	09:00	103	
01/31/21	10:00	37	
01/31/21	11:00	26	
01/31/21	12:00	14	
01/31/21	13:00	36	
01/31/21	14:00	70	
01/31/21	15:00	141	
01/31/21	16:00	177	
01/31/21	17:00	170	
01/31/21	18:00	145	
01/31/21	19:00	127	
01/31/21	20:00	239	
01/31/21	21:00	448	
01/31/21	22:00	611	
01/31/21	23:00	685	



Source		EASTFGDR
Parameter	Unit	H2SPPM (PPM)
02/01/21	00:00	590
02/01/21	01:00	468
02/01/21	02:00	387
02/01/21	03:00	278
02/01/21	04:00	343
02/01/21	05:00	283
02/01/21	06:00	326
02/01/21	07:00	341
02/01/21	08:00	459
02/01/21	09:00	520
02/01/21	10:00	459
02/01/21	11:00	336
02/01/21	12:00	248
02/01/21	13:00	203
02/01/21	14:00	198
02/01/21	15:00	240
02/01/21	16:00	257
02/01/21	17:00	325
02/01/21	18:00	636
02/01/21	19:00	654
02/01/21	20:00	573
02/01/21	21:00	188
02/01/21	22:00	123
02/01/21	23:00	223
02/02/21	00:00	263
02/02/21	01:00	256
02/02/21	02:00	109
02/02/21	03:00	63
02/02/21	04:00	71
02/02/21	05:00	86
02/02/21	06:00	98
02/02/21	07:00	92
02/02/21	08:00	80
02/02/21	09:00	63
02/02/21	10:00	64
02/02/21	11:00	84
02/02/21	12:00	89

Source		EASTFGDR
Parameter	Unit	H2SPPM (PPM)
02/02/21	13:00	114
02/02/21	14:00	132
02/02/21	15:00	147
02/02/21	16:00	119
02/02/21	17:00	81
02/02/21	18:00	65
02/02/21	19:00	59
02/02/21	20:00	61
02/02/21	21:00	45
02/02/21	22:00	46
02/02/21	23:00	51
02/03/21	00:00	78
02/03/21	01:00	109
02/03/21	02:00	138
02/03/21	03:00	140
02/03/21	04:00	148
02/03/21	05:00	148
02/03/21	06:00	148
02/03/21	07:00	148
02/03/21	08:00	148
02/03/21	09:00	148
02/03/21	10:00	148
02/03/21	11:00	148
02/03/21	12:00	148
02/03/21	13:00	148
02/03/21	14:00	148
02/03/21	15:00	148
02/03/21	16:00	148
02/03/21	17:00	148
02/03/21	18:00	148
02/03/21	19:00	148
02/03/21	20:00	148
02/03/21	21:00	148
02/03/21	22:00	148
02/03/21	23:00	148
02/04/21	00:00	148
02/04/21	01:00	148

Source		EASTFGDR
Parameter	Unit	H2SPPM (PPM)
02/04/21	02:00	148
02/04/21	03:00	148
02/04/21	04:00	148
02/04/21	05:00	148
02/04/21	06:00	148
02/04/21	07:00	148
02/04/21	08:00	148
02/04/21	09:00	148
02/04/21	10:00	148
02/04/21	11:00	148
02/04/21	12:00	148
02/04/21	13:00	148
02/04/21	14:00	148
02/04/21	15:00	148
02/04/21	16:00	268
02/04/21	17:00	391
02/04/21	18:00	532
02/04/21	19:00	560
02/04/21	20:00	534
02/04/21	21:00	401
02/04/21	22:00	317
02/04/21	23:00	292
02/05/21	00:00	314
02/05/21	01:00	340
02/05/21	02:00	328
02/05/21	03:00	365
02/05/21	04:00	296
02/05/21	05:00	240
02/05/21	06:00	152
02/05/21	07:00	110
02/05/21	08:00	82
02/05/21	09:00	60
02/05/21	10:00	45
02/05/21	11:00	45
02/05/21	12:00	35



As previously mentioned, we continue to have issues at the Nos. 4 and 5 Amine Regeneration Units (ARUs). Acid gas generated at the ARUs are vented to the No. 4 Sulfur Recovery Unit (4SRU) via the acid gas header. When the 4SRU is unable to accept the acid gas, the header builds pressure causing upset conditions at the ARUs reducing its ability to remove H₂S from the fuel gas. Additionally, it was determined that the absorption rate at the LP Amine Contactor (T-4850) was low. Operations increased the recycle gas rate to maintain proper amine to gas contact. Becht Engineering continues to assist in providing technical guidelines and recommendations to optimize the operation of the gas treating units.

If you have any questions or need additional information, please contact Maria Aloyo at (340) 692-3781.

Sincerely,

Robert Weldzius
Senior Vice President
Limetree Bay Refining, LLC

Electronic copy: Verline Marcellin (DPNR)



February 12, 2021

Mr. Austin F. Callwood, Director
Division of Environmental Protection
Department of Planning & Natural Resources
45 Mars Hill
Frederiksted, V.I. 00840-4474

SUBJECT: East Fuel Gas H₂S Exceedance – February 7 – 9, 2021

Dear Mr. Callwood:

This letter is submitted in compliance with Condition No. 2.4.5.1 of Limetree Bay Title V permit as a follow-up to the email notifications to Ms. Verline Marcellin of the Division of Environmental Protection on Monday, February 8, 2021 at 5:53 AM and 5:50 PM regarding the H₂S exceedances at the east fuel gas system.

The Continuous Emissions Monitoring System (CEMS) recorded H₂S concentrations in the fuel gas in excess of 0.1 gr/dscf (162 ppm) based on a 3-hr rolling average (ref. Title V permit condition 3.2.2.1.10) intermittently starting on Sunday, February 7, 2021 through February 9, 2021.

The following table provides 3-hr H₂S data during the exceedance events.

Source		EASTFGDR		Source		EASTFGDR		Source		EASTFGDR	
Parameter	Unit	H2SPPM (PPM)	(3-HR)	Parameter	Unit	H2SPPM (PPM)	(3-HR)	Parameter	Unit	H2SPPM (PPM)	(3-HR)
02/07/21	00:00	76		02/07/21	20:00	116		02/08/21	16:00	262	
02/07/21	01:00	91		02/07/21	21:00	111		02/08/21	17:00	268	
02/07/21	02:00	119		02/07/21	22:00	109		02/08/21	18:00	443	
02/07/21	03:00	144		02/07/21	23:00	106		02/08/21	19:00	620	
02/07/21	04:00	157		02/08/21	00:00	111		02/08/21	20:00	734	
02/07/21	05:00	166		02/08/21	01:00	129		02/08/21	21:00	734	
02/07/21	06:00	169		02/08/21	02:00	152		02/08/21	22:00	495	
02/07/21	07:00	171		02/08/21	03:00	163		02/08/21	23:00	289	
02/07/21	08:00	160		02/08/21	04:00	154		02/09/21	00:00	336	
02/07/21	09:00	150		02/08/21	05:00	217		02/09/21	01:00	520	
02/07/21	10:00	151		02/08/21	06:00	350		02/09/21	02:00	797	
02/07/21	11:00	164		02/08/21	07:00	350		02/09/21	03:00	660	
02/07/21	12:00	175		02/08/21	08:00	350		02/09/21	04:00	510	
02/07/21	13:00	176		02/08/21	09:00	483		02/09/21	05:00	239	
02/07/21	14:00	171		02/08/21	10:00	442		02/09/21	06:00	137	
02/07/21	15:00	163		02/08/21	11:00	330		02/09/21	07:00	122	
02/07/21	16:00	160		02/08/21	12:00	212		02/09/21	08:00	116	
02/07/21	17:00	153		02/08/21	13:00	200		02/09/21	09:00	119	
02/07/21	18:00	142		02/08/21	14:00	235		02/09/21	10:00	125	
02/07/21	19:00	126		02/08/21	15:00	256		02/09/21	11:00	102	



The acid gas to the No. 4 Sulfur Recovery Unit (4SRU) was contaminated with hydrocarbons causing upset conditions at 4SRU. Consequently, 4SRU stopped accepting the acid gas causing the acid gas header to build pressure. The increase in back pressure created upset conditions at the No.5 Amine Regeneration Unit (5ARU) reducing its ability to remove H₂S from the fuel gas. Additionally, charcoal escaped from the Charcoal Amine Filter (D-5831) at 5ARU plugging the amine circulation pumps. The charcoal has since been removed from the pumps. Operations made process adjustments to optimize the amine circulation.

If you have any questions or need additional information, please contact Maria Aloyo at (340) 692-3781.

Sincerely,

Robert Weldzius
Senior Vice President
Limetree Bay Refining, LLC

Electronic copy: Verline Marcellin (DPNR)



February 18, 2021

Mr. Austin F. Callwood, Director
Division of Environmental Protection
Department of Planning & Natural Resources
45 Mars Hill
Frederiksted, V.I. 00840-4474

SUBJECT: East Fuel Gas H₂S Exceedance – February 11 and 12, 2021

Dear Mr. Callwood:

This letter is submitted in compliance with Condition No. 2.4.5.1 of the Limetree Bay Title V permit as a follow-up to the email notification to Ms. Verline Marcellin of the Division of Environmental Protection on Friday, February 12, 2021 at 8:00 AM regarding the H₂S exceedance at the east fuel gas system.

The Continuous Emissions Monitoring System (CEMS) recorded H₂S concentrations in the fuel gas in excess of 0.1 gr/dscf (162 ppm) based on a 3-hr rolling average (ref. Title V permit condition 3.2.2.1.11) from 1800 to 2300 hours on 2/11/21 and 0600 to 2000 hours on 2/12/21.

The following table provides 3-hr H₂S data on February 11 and 12, 2021.

Source		EASTFGDR
Parameter Unit		H2SPPM (PPM)
02/11/21	15:00	22
02/11/21	16:00	22
02/11/21	17:00	60
02/11/21	18:00	188 E
02/11/21	19:00	384 E
02/11/21	20:00	566 E
02/11/21	21:00	496 E
02/11/21	22:00	308 E
02/11/21	23:00	99
02/12/21	00:00	67
02/12/21	01:00	81
02/12/21	02:00	86
02/12/21	03:00	74
02/12/21	04:00	65
02/12/21	05:00	108
02/12/21	06:00	233 E
02/12/21	07:00	467 E
02/12/21	08:00	827 E
02/12/21	09:00	1,012 E



02/12/21	10:00	1,117 E
02/12/21	11:00	1,042 E
02/12/21	12:00	991 E
02/12/21	13:00	918 E
02/12/21	14:00	927 E
02/12/21	15:00	927 E
02/12/21	16:00	833 E
02/12/21	17:00	673 E
02/12/21	18:00	342 E
02/12/21	19:00	175 E
02/12/21	20:00	76
02/12/21	21:00	66
02/12/21	22:00	58
02/12/21	23:00	41

On February 11, 2020 the No. 5 Amine Regeneration Unit (ARU) developed a leak in the fin fan condensers. To address the leak, operations switched from 5 ARU to 4 ARU. The No. 4 ARU had low amine levels affecting the circulation rate of the amine unit. Lower amine circulation equates to less H₂S removal hence the spike in H₂S in the fuel gas. The amine level was increased in the No. 4 ARU and the H₂S in the fuel gas decreased to normal levels. Then at approximately 0600 hours on 2/12/21 and continuing through 2000 hours there was an additional H₂S exceedance in the fuel gas. This was a continuation of the initial H₂S exceedance on 2/11/21 as the No. 4 ARU operation continued to be unstable on 2/12/21 due to differential pressures of converting operations from No. 5 ARU to No. 4 ARU. Once the No. 4 ARU stabilized unit pressures and temperatures the H₂S levels returned to normal.

If you have any questions or need additional information, please contact Maria Aloyo at (340) 692-3781.

Sincerely,

Robert Weldzius
Senior Vice President
Limetree Bay Refining, LLC

cc: Verline Marcellin (DPNR) via email



February 23, 2021

Mr. Austin F. Callwood, Director
Division of Environmental Protection
Department of Planning & Natural Resources
45 Mars Hill
Frederiksted, V.I. 00840-4474

SUBJECT: East Fuel Gas H₂S Exceedance – February 16, 2021

Dear Mr. Callwood:

This letter is submitted in compliance with Condition No. 2.4.5.1 of the Limetree Bay Title V permit as a follow-up to the email notification to Ms. Verline Marcellin of the Division of Environmental Protection on Tuesday, February 16, 2021 at 13:32 hrs regarding the H₂S exceedance at the east fuel gas system.

The Continuous Emissions Monitoring System (CEMS) recorded H₂S concentrations in the fuel gas in excess of 0.1 gr/dscf (162 ppm) based on a 3-hr rolling average (ref. Title V permit condition 3.2.2.1.11) from 0900 to 2300 hours on 2/16/21.

The following table provides 3-hr H₂S data on February 16, 2021.

Source		EASTFGDR
Parameter	Unit	H2SPPM (PPM)
02/16/21	05:00	35
02/16/21	06:00	44
02/16/21	07:00	59
02/16/21	08:00	131
02/16/21	09:00	226
02/16/21	10:00	336
02/16/21	11:00	454
02/16/21	12:00	546
02/16/21	13:00	565
02/16/21	14:00	506
02/16/21	15:00	347
02/16/21	16:00	234
02/16/21	17:00	259
02/16/21	18:00	425
02/16/21	19:00	507
02/16/21	20:00	439
02/16/21	21:00	319
02/16/21	22:00	237
02/16/21	23:00	152
02/17/21	00:00	73



On February 16, 2021 a low flow of amine in the Liquid Petroleum Gas (LPG) Contactor at No. 4 Amine Regeneration Unit (ARU) was observed. The low amine flow diminishes the ability of the amine unit to remove H₂S from the LPG, which goes into the fuel gas system. It was found that the charcoal in the Charcoal Amine Filter at No. 4ARU had come out of the filter and moved downstream, plugging the amine circulation pumps. The corrective action was to remove the charcoal from the pumps to re-establish proper amine circulation.

If you have any questions or need additional information, please contact Maria Aloyo at (340) 692-3781.

Sincerely,

Robert Weldzius
Senior Vice President
Limetree Bay Refining, LLC

cc: Verline Marcellin (DPNR) via email



May 12, 2021

Mr. Austin F. Callwood, Director
Division of Environmental Protection
Department of Planning & Natural Resources
45 Mars Hill
Frederiksted, V.I. 00840-4474

SUBJECT: East Fuel Gas H₂S Exceedance – May 5, 2021

Dear Mr. Callwood:

This letter is submitted in compliance with Condition No. 2.4.5.1 of the Limetree Bay Title V permit as a follow-up to the email notification to Ms. Verline Marcellin of the Division of Environmental Protection on May 5, 2021 at 6:18 PM regarding the H₂S exceedance event at the east fuel gas system.

The Continuous Monitoring System (CMS) recorded H₂S concentrations in the fuel gas in excess of 0.1 gr/dscf (162 ppm) based on a 3-hr rolling average (ref. Title V permit condition 3.2.2.1.11) from 3:00 PM to 8:59 PM on May 5, 2021.

The following table provides 3-hr H₂S data during the event.

Source		EASTFGDR
Parameter	Unit	H2SPPM (PPM)
05/05/21	14:00	149
05/05/21	15:00	351
05/05/21	16:00	633
05/05/21	17:00	819
05/05/21	18:00	716
05/05/21	19:00	426
05/05/21	20:00	197
05/05/21	21:00	91

On the afternoon of May 5th, Operations was working on bringing the No. 4 Amine Regeneration Unit (4ARU) online. The No. 5 Amine Regeneration Unit (5ARU) was already online. While trying to balance the load between both units, 5ARU was under high pressure and therefore the system relieved the pressure to 4ARU. However, 4ARU was not at the adequate operating parameters to properly regenerate the rich amine laden with H₂S to lean amine. As a result, the amine that circulated to the gas recovery unit was unable to remove additional H₂S from the fuel gas. Operations immediately placed the No. 7 Distillate Desulfurizer Unit (DD7) on circulation to reduce the load to the amine units.

If you have any questions or need additional information, please contact Maria Aloyo at (340) 692-3781.

Sincerely,

Neil Morgan
VP, Refinery and General Manager
Limetree Bay Refining, LLC

cc: Verline Marcellin (DPNR) via email



May 14, 2021

Mr. Austin F. Callwood, Director
Division of Environmental Protection
Department of Planning & Natural Resources
45 Mars Hill
Frederiksted, V.I. 00840-4474

SUBJECT: East Fuel Gas H₂S Exceedance – May 8, 9, & 11, 2021

Dear Mr. Callwood:

This letter is submitted in compliance with Condition No. 2.4.5.1 of the Limetree Bay Title V permit as a follow-up to the email notifications to Ms. Verline Marcellin of the Division of Environmental Protection on May 8, 2021 at 9:25 AM and 10:38 PM and May 11, 2021 at 11:21 AM regarding the H₂S exceedance events at the east fuel gas system.

The Continuous Emissions Monitoring System (CEMS) recorded H₂S concentrations in the fuel gas in excess of 0.1 gr/dscf (162 ppm) based on a 3-hr rolling average (ref. Title V permit condition 3.2.2.1.11) intermittently from May 8-9, 2021 and on May 11, 2021.

The following table provides 3-hr H₂S data during the events.

Source			Source			Source		
Parameter Unit		EASTFGDR	Parameter Unit		EASTFGDR	Parameter Unit		EASTFGDR
		H2SPPM (PPM)			H2SPPM (PPM)			H2SPPM (PPM)
05/08/21	00:00	64	05/08/21	23:00	310	05/09/21	22:00	74
05/08/21	01:00	72	05/09/21	00:00	336	05/09/21	23:00	52
05/08/21	02:00	76	05/09/21	01:00	463	05/10/21	00:00	32
05/08/21	03:00	72	05/09/21	02:00	446	05/10/21	01:00	13
05/08/21	04:00	63	05/09/21	03:00	359	05/10/21	02:00	3
05/08/21	05:00	68	05/09/21	04:00	159	05/10/21	03:00	0
05/08/21	06:00	258	05/09/21	05:00	92	05/10/21	04:00	0
05/08/21	07:00	413	05/09/21	06:00	96	05/10/21	05:00	0
05/08/21	08:00	460	05/09/21	07:00	76	05/10/21	06:00	0
05/08/21	09:00	292	05/09/21	08:00	47	05/10/21	07:00	0
05/08/21	10:00	186	05/09/21	09:00	9	05/10/21	08:00	0
05/08/21	11:00	182	05/09/21	10:00	1	05/10/21	09:00	0
05/08/21	12:00	212	05/09/21	11:00	2	05/10/21	10:00	0
05/08/21	13:00	202	05/09/21	12:00	29	05/10/21	11:00	0
05/08/21	14:00	187	05/09/21	13:00	68	05/10/21	12:00	0
05/08/21	15:00	178	05/09/21	14:00	110	05/10/21	13:00	0
05/08/21	16:00	165	05/09/21	15:00	136	05/10/21	14:00	0
05/08/21	17:00	143	05/09/21	16:00	133	05/10/21	15:00	0
05/08/21	18:00	125	05/09/21	17:00	128	05/10/21	16:00	0
05/08/21	19:00	111	05/09/21	18:00	99	05/10/21	17:00	0
05/08/21	20:00	132	05/09/21	19:00	99	05/10/21	18:00	0
05/08/21	21:00	188	05/09/21	20:00	93	05/10/21	19:00	0
05/08/21	22:00	255	05/09/21	21:00	90	05/10/21	20:00	0



Source		EASTFGDR
Parameter Unit		H2SPPM (PPM)
05/10/21	21:00	0
05/10/21	22:00	0
05/10/21	23:00	10
05/11/21	00:00	19
05/11/21	01:00	24

Source		EASTFGDR
Parameter Unit		H2SPPM (PPM)
05/11/21	02:00	43
05/11/21	03:00	95
05/11/21	04:00	133
05/11/21	05:00	146
05/11/21	06:00	129

Source		EASTFGDR
Parameter Unit		H2SPPM (PPM)
05/11/21	07:00	156
05/11/21	08:00	179
05/11/21	09:00	153
05/11/21	10:00	103
05/11/21	11:00	55

As mentioned in the letter to DPNR dated May 13, 2021, the analyzer technicians were investigating possible interference issues with the CEMS analyzer based on the results of colormetric tube sampling. Operations continued to take colormetric tube samples several times daily. The sampling results thus far showed in most cases the CEMS analyzer was reading either significantly lower or higher than the colormetric tube samples. The analyzer technicians are currently working with the CEMS vendor to troubleshoot potential issues with interferences in the analyzer.

Some of the colormetric tube samples showed elevated H₂S concentrations and therefore Operations continued sulfur shedding to reduce the sulfur load on the gas treating units. Operations also continued investigating the low-pressure and high-pressure fuel gas treating systems and discovered that a bypass valve from T-4850 may have been passing off-gas to the treated fuel gas. It's unclear how long the valve may have been passing to the treated fuel gas system. Upon discovery, Operations immediately attempted to close the valve and sealants were added to the valve. The valve continued to leak into the fuel gas system. Operations is currently preparing to blind the valve and remove it for repairs during this shutdown.

If you have any questions or need additional information, please contact Maria Aloyo at (340) 692-3781.

Sincerely,

Neil Morgan
VP, Refinery and General Manager
Limetree Bay Refining, LLC

Electronic Copy: Verline Marcellin (DPNR)
Robert Buettner (EPA)
Patrick Foley (EPA)
Harish Patel (EPA)



January 21, 2021

Mr. Austin F. Callwood, Director
Division of Environmental Protection
Department of Planning & Natural Resources
45 Mars Hill
Frederiksted, V.I. 00840-4474

SUBJECT: East Fuel Gas H₂S Exceedance – January 14, 2021 - Ongoing

Dear Mr. Callwood:

This letter is submitted in compliance with Condition No. 2.4.5.1 of Limetree Bay Title V permit as a follow-up to the email notification to Ms. Verline Marcellin of the Division of Environmental Protection on Thursday, January 14, 2020 at 08:57 hours regarding H₂S exceedance at the east fuel gas system.

The Continuous Emissions Monitoring System (CEMS) recorded H₂S concentrations in the fuel gas in excess of 0.1 gr/dscf (162 ppm) based on a 3-hr rolling average (ref. Title V permit condition 3.2.2.1.10) from Thursday, January 14, 2021 at 04:00 hours to present.

The following table provides 3-hr H₂S concentrations in the east fuel gas system from January 14, 2021 to present.

Source		EASTFGDR
Parameter	Unit	H ₂ SPPM (PPM)
01/14/21	00:00	111
01/14/21	01:00	129
01/14/21	02:00	148
01/14/21	03:00	143
01/14/21	04:00	167
01/14/21	05:00	172
01/14/21	06:00	179
01/14/21	07:00	181
01/14/21	08:00	217
01/14/21	09:00	273
01/14/21	10:00	307
01/14/21	11:00	347
01/14/21	12:00	380
01/14/21	13:00	393
01/14/21	14:00	410
01/14/21	15:00	454
01/14/21	16:00	481
01/14/21	17:00	499
01/14/21	18:00	447
01/14/21	19:00	437
01/14/21	20:00	428
01/14/21	21:00	458

Source		EASTFGDR
Parameter	Unit	H ₂ SPPM (PPM)
01/14/21	22:00	448
01/14/21	23:00	419
01/15/21	00:00	373
01/15/21	01:00	348
01/15/21	02:00	343
01/15/21	03:00	350
01/15/21	04:00	371
01/15/21	05:00	380
01/15/21	06:00	408
01/15/21	07:00	425
01/15/21	08:00	424
01/15/21	09:00	455
01/15/21	10:00	509
01/15/21	11:00	582
01/15/21	12:00	625
01/15/21	13:00	665
01/15/21	14:00	697
01/15/21	15:00	637
01/15/21	16:00	584
01/15/21	17:00	590
01/15/21	18:00	617
01/15/21	19:00	591

Source		EASTFGDR
Parameter	Unit	H ₂ SPPM (PPM)
01/15/21	20:00	501
01/15/21	21:00	453
01/15/21	22:00	416
01/15/21	23:00	395
01/16/21	00:00	355
01/16/21	01:00	279
01/16/21	02:00	231
01/16/21	03:00	213
01/16/21	04:00	282
01/16/21	05:00	314
01/16/21	06:00	354
01/16/21	07:00	340
01/16/21	08:00	340
01/16/21	09:00	310
01/16/21	10:00	346
01/16/21	11:00	390
01/16/21	12:00	394
01/16/21	13:00	338
01/16/21	14:00	275
01/16/21	15:00	369
01/16/21	16:00	495
01/16/21	17:00	626



Source		EASTFGDR
Parameter	Unit	H2SPPM (PPM)
01/16/21	18:00	577
01/16/21	19:00	499
01/16/21	20:00	398
01/16/21	21:00	463
01/16/21	22:00	540
01/16/21	23:00	651
01/17/21	00:00	652
01/17/21	01:00	661
01/17/21	02:00	614
01/17/21	03:00	564
01/17/21	04:00	491
01/17/21	05:00	491
01/17/21	06:00	491
01/17/21	07:00	491
01/17/21	08:00	491
01/17/21	09:00	429
01/17/21	10:00	409
01/17/21	11:00	385
01/17/21	12:00	355
01/17/21	13:00	391
01/17/21	14:00	464
01/17/21	15:00	553
01/17/21	16:00	559
01/17/21	17:00	547
01/17/21	18:00	529
01/17/21	19:00	503
01/17/21	20:00	489
01/17/21	21:00	496
01/17/21	22:00	489
01/17/21	23:00	426
01/18/21	00:00	351
01/18/21	01:00	277
01/18/21	02:00	358
01/18/21	03:00	477
01/18/21	04:00	592
01/18/21	05:00	620
01/18/21	06:00	613
01/18/21	07:00	607

Source		EASTFGDR
Parameter	Unit	H2SPPM (PPM)
01/18/21	08:00	566
01/18/21	09:00	554
01/18/21	10:00	536
01/18/21	11:00	517
01/18/21	12:00	480
01/18/21	13:00	525
01/18/21	14:00	511
01/18/21	15:00	516
01/18/21	16:00	465
01/18/21	17:00	451
01/18/21	18:00	415
01/18/21	19:00	410
01/18/21	20:00	415
01/18/21	21:00	413
01/18/21	22:00	447
01/18/21	23:00	504
01/19/21	00:00	547
01/19/21	01:00	491
01/19/21	02:00	428
01/19/21	03:00	435
01/19/21	04:00	457
01/19/21	05:00	435
01/19/21	06:00	396
01/19/21	07:00	372
01/19/21	08:00	408
01/19/21	09:00	445
01/19/21	10:00	435
01/19/21	11:00	393
01/19/21	12:00	328
01/19/21	13:00	300
01/19/21	14:00	303
01/19/21	15:00	316
01/19/21	16:00	352
01/19/21	17:00	357
01/19/21	18:00	344
01/19/21	19:00	346
01/19/21	20:00	356
01/19/21	21:00	351

Source		EASTFGDR
Parameter	Unit	H2SPPM (PPM)
01/19/21	22:00	337
01/19/21	23:00	345
01/20/21	00:00	348
01/20/21	01:00	375
01/20/21	02:00	391
01/20/21	03:00	447
01/20/21	04:00	417
01/20/21	05:00	372
01/20/21	06:00	275
01/20/21	07:00	240
01/20/21	08:00	257
01/20/21	09:00	228
01/20/21	10:00	148
01/20/21	11:00	129
01/20/21	12:00	251
01/20/21	13:00	398
01/20/21	14:00	436
01/20/21	15:00	399
01/20/21	16:00	370
01/20/21	17:00	351
01/20/21	18:00	335
01/20/21	19:00	336
01/20/21	20:00	349
01/20/21	21:00	365
01/20/21	22:00	349
01/20/21	23:00	329
01/21/21	00:00	322
01/21/21	01:00	343
01/21/21	02:00	396
01/21/21	03:00	413
01/21/21	04:00	398
01/21/21	05:00	348
01/21/21	06:00	358
01/21/21	07:00	371
01/21/21	08:00	371
01/21/21	09:00	341
01/21/21	10:00	329



On January 14, 2021, the amine units were saturated with H₂S and thus unable to further remove any additional H₂S from the fuel gas. Due to the past and current issues with the amine units, several measures are being taken to optimize the operation of the amine units including but not limited to the following:

1. Conduct a survey of all potential sources of H₂S to the amine units and fuel gas system.
2. Issue step by step guidelines to Operations to optimize the operation of the amine system.
3. Add fresh amine solution to the system and maintain amine circulation.
4. Use a charcoal filter to remove any hydrocarbon present in the amine system.
5. Adjust amine system overhead temperature.
6. Inject antifoam to control amine foaming at the amine stills to prevent amine carryover from the system during hydrocarbon skimming.
7. Startup the No. 7 Amine Unit and route off-gasses from the separators.

We are committed to resolving these issues as expeditiously as possible and bringing the units back into compliance during this Restart period.

If you have any questions or need additional information, please contact Maria Aloyo at (340) 692-3781.

Sincerely,

Robert Weldzius
Senior Vice President
Limetree Bay Refining, LLC

cc: Verline Marcellin
(DPNR)



January 5, 2021

Mr. Austin F. Callwood, Director
Division of Environmental Protection
Department of Planning & Natural Resources
45 Mars Hill
Frederiksted, V.I. 00840-4474

SUBJECT: East Fuel Gas H₂S Exceedance – December 30 - 31, 2020 and January 1, 2021

Dear Mr. Callwood:

This letter is submitted in compliance with Condition No. 2.4.5.1 of Limetree Bay Title V permit as a follow-up to the email notifications to Ms. Verline Marcellin of the Division of Environmental Protection on the following dates regarding the H₂S exceedances at the east fuel gas system.

- East Fuel Gas - Wednesday, December 30, 2020 at 15:53 hours
- East Fuel Gas - Thursday, December 31, 2020 at 01:13 and 09:31 hours
- East Fuel Gas - Friday, January 1, 2021 at 15:51 hours

The Continuous Emissions Monitoring System (CEMS) recorded H₂S concentrations in the fuel gas in excess of 0.1 gr/dscf (162 ppm) based on a 3-hr rolling average (ref. Title V permit condition 3.2.2.1.11) on Wednesday, December 30, 2020, Thursday, December 31, 2020 and Friday, January 1, 2021.

The following table provides 3-hr H₂S concentrations in the east fuel gas system from December 30, 2020 to January 2, 2021 .

Source	Parameter Unit	EASTFGDR H2SPPM (PPM) 003H
12/30/20 00:00		26
12/30/20 01:00		27
12/30/20 02:00		21
12/30/20 03:00		22
12/30/20 04:00		24
12/30/20 05:00		36
12/30/20 06:00		76
12/30/20 07:00		103
12/30/20 08:00		125
12/30/20 09:00		125
12/30/20 10:00		131
12/30/20 11:00		150
12/30/20 12:00		168
12/30/20 13:00		182
12/30/20 14:00		171
12/30/20 15:00		138
12/30/20 16:00		99
12/30/20 17:00		80
12/30/20 18:00		83
Source	Parameter Unit	EASTFGDR H2SPPM (PPM) 003H
12/30/20 19:00		95
12/30/20 20:00		96
12/30/20 21:00		112
12/30/20 22:00		142
12/30/20 23:00		165
12/31/20 00:00		152
12/31/20 01:00		112
12/31/20 02:00		76
12/31/20 03:00		61
12/31/20 04:00		66
12/31/20 05:00		101
12/31/20 06:00		173
12/31/20 07:00		218
12/31/20 08:00		233
12/31/20 09:00		231
12/31/20 10:00		292
12/31/20 11:00		361
12/31/20 12:00		394
12/31/20 13:00		434
Source	Parameter Unit	EASTFGDR H2SPPM (PPM) 003H
12/31/20 14:00		489
12/31/20 15:00		500
12/31/20 16:00		444
12/31/20 17:00		369
12/31/20 18:00		362
12/31/20 19:00		425
12/31/20 20:00		464
12/31/20 21:00		457
12/31/20 22:00		399
12/31/20 23:00		356
01/01/21 00:00		239
01/01/21 01:00		164
01/01/21 02:00		87
01/01/21 03:00		113
01/01/21 04:00		68
01/01/21 05:00		38
01/01/21 06:00		88
01/01/21 07:00		189
01/01/21 08:00		197



Source		EASTFGDR	
Parameter	Unit	H2SPPM (PPM) 003H	
01/01/21	09:00		120
01/01/21	10:00		58
01/01/21	11:00		142
01/01/21	12:00		294
01/01/21	13:00		399

Source		EASTFGDR	
Parameter	Unit	H2SPPM (PPM) 003H	
01/01/21	14:00		459
01/01/21	15:00		405
01/01/21	16:00		273
01/01/21	17:00		127
01/01/21	18:00		31

Source		EASTFGDR	
Parameter	Unit	H2SPPM (PPM) 003H	
01/01/21	19:00		27
01/01/21	20:00		20
01/01/21	21:00		25
01/01/21	22:00		19
01/01/21	23:00		17

Starting on December 30, 2020, Limetree Bay personnel was searching for the source of the H₂S in the fuel gas, checking all pressure relief systems and valves. On January 1, 2021, a bypass valve was discovered cracked open on the high-pressure amine contactor causing untreated fuel gas to enter the fuel gas system. The bypass valve was immediately closed upon discovery. To further reduce the H₂S in the fuel gas system the facility was working on adding fresh amine to the Nos. 4 and 5 amine units.

If you have any questions or need additional information, please contact Maria Aloyo at (340) 692-3781.

Sincerely,

Robert Weldzius
Senior Vice President
Limetree Bay Refining, LLC

cc: Verline Marcellin
(DPNR)



March 25, 2021

Mr. Austin F. Callwood, Director
Division of Environmental Protection
Department of Planning & Natural Resources
45 Mars Hill
Frederiksted, V.I. 00840-4474

SUBJECT: East Fuel Gas H₂S Exceedance – March 18, 2021 - Ongoing

Dear Mr. Callwood:

This letter is submitted in compliance with Condition No. 2.4.5.1 of Limetree Bay Title V permit as a follow-up to the email notification to Ms. Verline Marcellin of the Division of Environmental Protection on Thursday, March 18, 2021 at 04:05 AM regarding H₂S exceedance at the east fuel gas system.

The Continuous Emissions Monitoring System (CEMS) recorded H₂S concentrations in the fuel gas in excess of 0.1 gr/dscf (162 ppm) based on a 3-hr rolling average (ref. Title V permit condition 3.2.2.1.10) from Thursday, March 18, 2021 at 02:00 AM to present.

The following table provides 3-hr H₂S concentrations during the exceedance event.

Source		EASTFGDR	Source		EASTFGDR	Source		EASTFGDR
Parameter Unit		H2SPPM (PPM)	Parameter Unit		H2SPPM (PPM)	Parameter Unit		H2SPPM (PPM)
03/18/21	00:00	117	03/18/21	23:00	1,283	03/19/21	22:00	487
03/18/21	01:00	155	03/19/21	00:00	1,286	03/19/21	23:00	523
03/18/21	02:00	189	03/19/21	01:00	1,216	03/20/21	00:00	474
03/18/21	03:00	228	03/19/21	02:00	1,159	03/20/21	01:00	347
03/18/21	04:00	261	03/19/21	03:00	1,185	03/20/21	02:00	256
03/18/21	05:00	293	03/19/21	04:00	1,054	03/20/21	03:00	241
03/18/21	06:00	326	03/19/21	05:00	780	03/20/21	04:00	232
03/18/21	07:00	369	03/19/21	06:00	373	03/20/21	05:00	234
03/18/21	08:00	429	03/19/21	07:00	158	03/20/21	06:00	246
03/18/21	09:00	544	03/19/21	08:00	156	03/20/21	07:00	253
03/18/21	10:00	678	03/19/21	09:00	262	03/20/21	08:00	342
03/18/21	11:00	807	03/19/21	10:00	524	03/20/21	09:00	541
03/18/21	12:00	807	03/19/21	11:00	751	03/20/21	10:00	909
03/18/21	13:00	871	03/19/21	12:00	1,028	03/20/21	11:00	1,188
03/18/21	14:00	941	03/19/21	13:00	1,079	03/20/21	12:00	1,371
03/18/21	15:00	1,042	03/19/21	14:00	1,037	03/20/21	13:00	1,369
03/18/21	16:00	1,166	03/19/21	15:00	968	03/20/21	14:00	1,397
03/18/21	17:00	1,173	03/19/21	16:00	767	03/20/21	15:00	1,304
03/18/21	18:00	1,252	03/19/21	17:00	631	03/20/21	16:00	1,201
03/18/21	19:00	1,319	03/19/21	18:00	553	03/20/21	17:00	796
03/18/21	20:00	1,410	03/19/21	19:00	589	03/20/21	18:00	456
03/18/21	21:00	1,335	03/19/21	20:00	571	03/20/21	19:00	145
03/18/21	22:00	1,295	03/19/21	21:00	452	03/20/21	20:00	128



LIMETREE BAY REFINING, LLC

Source		EASTFGDR
Parameter	Unit	H2SPPM (PPM)
03/20/21	21:00	162
03/20/21	22:00	165
03/20/21	23:00	161
03/21/21	00:00	195
03/21/21	01:00	260
03/21/21	02:00	303
03/21/21	03:00	311
03/21/21	04:00	297
03/21/21	05:00	306
03/21/21	06:00	411
03/21/21	07:00	576
03/21/21	08:00	734
03/21/21	09:00	965
03/21/21	10:00	1,133
03/21/21	11:00	1,371
03/21/21	12:00	1,429
03/21/21	13:00	1,502
03/21/21	14:00	1,501
03/21/21	15:00	1,510
03/21/21	16:00	1,559
03/21/21	17:00	1,695
03/21/21	18:00	1,726
03/21/21	19:00	1,638
03/21/21	20:00	1,477
03/21/21	21:00	1,148
03/21/21	22:00	855
03/21/21	23:00	572
03/22/21	00:00	672
03/22/21	01:00	845
03/22/21	02:00	1,022
03/22/21	03:00	891
03/22/21	04:00	677
03/22/21	05:00	416
03/22/21	06:00	339
03/22/21	07:00	525
03/22/21	08:00	910

Source		EASTFGDR
Parameter	Unit	H2SPPM (PPM)
03/22/21	09:00	1,254
03/22/21	10:00	1,445
03/22/21	11:00	1,562
03/22/21	12:00	1,646
03/22/21	13:00	1,690
03/22/21	14:00	1,618
03/22/21	15:00	1,593
03/22/21	16:00	1,543
03/22/21	17:00	1,607
03/22/21	18:00	1,600
03/22/21	19:00	1,416
03/22/21	20:00	1,144
03/22/21	21:00	1,021
03/22/21	22:00	1,077
03/22/21	23:00	1,227
03/23/21	00:00	1,229
03/23/21	01:00	1,292
03/23/21	02:00	1,083
03/23/21	03:00	956
03/23/21	04:00	893
03/23/21	05:00	997
03/23/21	06:00	1,129
03/23/21	07:00	1,093
03/23/21	08:00	1,181
03/23/21	09:00	1,195
03/23/21	10:00	1,286
03/23/21	11:00	1,286
03/23/21	12:00	1,390
03/23/21	13:00	1,321
03/23/21	14:00	1,321
03/23/21	15:00	1,520
03/23/21	16:00	1,607
03/23/21	17:00	1,860
03/23/21	18:00	1,797
03/23/21	19:00	1,749
03/23/21	20:00	1,588

Source		EASTFGDR
Parameter	Unit	H2SPPM (PPM)
03/23/21	21:00	1,521
03/23/21	22:00	1,424
03/23/21	23:00	1,344
03/24/21	00:00	1,149
03/24/21	01:00	1,181
03/24/21	02:00	1,309
03/24/21	03:00	1,530
03/24/21	04:00	1,525
03/24/21	05:00	1,498
03/24/21	06:00	1,466
03/24/21	07:00	1,589
03/24/21	08:00	1,674
03/24/21	09:00	1,703
03/24/21	10:00	1,705
03/24/21	11:00	1,804
03/24/21	12:00	1,853
03/24/21	13:00	1,872
03/24/21	14:00	1,751
03/24/21	15:00	1,737
03/24/21	16:00	1,612
03/24/21	17:00	1,657
03/24/21	18:00	1,562
03/24/21	19:00	1,494
03/24/21	20:00	1,218
03/24/21	21:00	1,073
03/24/21	22:00	998
03/24/21	23:00	1,038
03/25/21	00:00	1,041
03/25/21	01:00	1,020
03/25/21	02:00	1,002
03/25/21	03:00	1,020
03/25/21	04:00	1,060
03/25/21	05:00	1,112
03/25/21	06:00	1,074
03/25/21	07:00	954
03/25/21	08:00	770



On March 18, 2021, hydrocarbon carryover due to high level in the stripper receiver at No. 7 Distillate Desulfurizer (DD7) entered the No. 2 Gas Recovery Unit (2GRU) impacting the low-pressure amine contactor. The hydrocarbon-saturated amine from the amine contactor went to the amine flash drum which was lined up to the No. 5 Amine Regeneration Unit (5ARU). As a result, the hydrocarbon caused high level in the 5ARU amine still receiver. From the 5ARU amine still receiver, hydrocarbon carried over to the No. 4 Sulfur Recovery Unit (4SRU) via the acid gas header. Operations' response to the carry over was to cut the acid gas header feed to 4SRU, which caused backpressure to 5ARU. Due to the upset conditions at 2GRU and 5ARU, the removal efficiency for H₂S was greatly reduced. Process adjustments were made to reduce the level in the stripper receiver. Operations began skimming hydrocarbon from 5ARU and the amine flash drum. Also, the amine flash drum level system was serviced.

On the following day, March 19, 2021, a similar incident occurred where the hydrocarbon carryover to the 2GRU originated at the stripper receiver in No. 9 Distillate Desulfurizer (DD9). It was discovered that the level gauge on the stripper receiver was faulty. The level gauge was repaired by Maintenance and put back into service.

On March 23, 2021, the No. 4 Amine Regeneration Unit (4ARU) was placed in service while the work on 5ARU and the amine flash drum continued. Later that day, hydrocarbon carryover from the stripper receiver at DD9 occurred again impacting 2GRU and 4ARU. Process adjustments were made to reduce the level in the stripper receiver. Operations began skimming the hydrocarbon from 4ARU.

We are committed to resolving these issues as expeditiously as possible and bringing the units back into compliance. If you have any questions or need additional information, please contact Maria Aloyo at (340) 692-3781.

Sincerely,

Robert Weldzius
Senior Vice President
Limetree Bay Refining, LLC

cc: Verline Marcellin
(DPNR)



April 23, 2021

Mr. Austin F. Callwood, Director
 Division of Environmental Protection
 Department of Planning & Natural Resources
 45 Mars Hill
 Frederiksted, V.I. 00840-4474

**SUBJECT: East Fuel Gas H₂S Exceedance – April 18-23, 2021
 and East Incinerator Opacity – April 19, 2021**

Dear Mr. Callwood:

This letter is submitted in compliance with Condition No. 2.4.5.1 of Limetree Bay Title V permit as a follow-up to the email notifications to Ms. Verline Marcellin of the Division of Environmental Protection on the following dates regarding an H₂S exceedance at east fuel gas system and an opacity at the east incinerator.

- East Fuel Gas - Sunday, April 18, 2021 at 1:18 PM
- East Incinerator – Wednesday, April 14, 2021 at 7:45 AM
- East Fuel Gas – Tuesday, April 20, 2021 at 7:46 AM

The Continuous Emissions Monitoring System (CEMS) at the east fuel gas system recorded H₂S concentrations in excess of 0.1 gr/dscf (162 ppm) based on a 3-hr rolling average (ref. Title V permit condition 3.2.2.1.10) intermittently since Sunday, April 18, 2021.

The following table provides the 3-hr H₂S concentrations at the east fuel gas system during the exceedance events.

Source	EASTFGDR	
Parameter Unit	H2SPPM (PPM)	
04/18/21 07:00	62	04/19/21 00:00 95
04/18/21 08:00	63	04/19/21 01:00 81
04/18/21 09:00	65	04/19/21 02:00 55
04/18/21 10:00	68	04/19/21 03:00 40
04/18/21 11:00	166	04/19/21 04:00 29
04/18/21 12:00	281	04/19/21 05:00 22
04/18/21 13:00	322	04/19/21 06:00 23
04/18/21 14:00	557	04/19/21 07:00 22
04/18/21 15:00	556	04/19/21 08:00 18
04/18/21 16:00	595	04/19/21 09:00 9
04/18/21 17:00	290	04/19/21 10:00 3
04/18/21 18:00	185	04/19/21 11:00 5
04/18/21 19:00	135	04/19/21 12:00 42
04/18/21 20:00	129	04/19/21 13:00 452
04/18/21 21:00	172	04/19/21 14:00 865
04/18/21 22:00	146	04/19/21 15:00 868
04/18/21 23:00	146	04/19/21 16:00 483
		04/19/21 17:00 145
		04/19/21 18:00 125



LIMETREE BAY
REFINING, LLC

04/19/21	19:00	105
04/19/21	20:00	32
04/19/21	21:00	26
04/19/21	22:00	32
04/19/21	23:00	45
04/20/21	00:00	50
04/20/21	01:00	56
04/20/21	02:00	67
04/20/21	03:00	75
04/20/21	04:00	122
04/20/21	05:00	253
04/20/21	06:00	420
04/20/21	07:00	529
04/20/21	08:00	529
04/20/21	09:00	727
04/20/21	10:00	931
04/20/21	11:00	1,099
04/20/21	12:00	1,122
04/20/21	13:00	1,121
04/20/21	14:00	965
04/20/21	15:00	952
04/20/21	16:00	731
04/20/21	17:00	917
04/20/21	18:00	991
04/20/21	19:00	1,439
04/20/21	20:00	1,668
04/20/21	21:00	1,817
04/20/21	22:00	1,811
04/20/21	23:00	1,823
04/21/21	00:00	1,726
04/21/21	01:00	1,621
04/21/21	02:00	1,369
04/21/21	03:00	995
04/21/21	04:00	714
04/21/21	05:00	464
04/21/21	06:00	366
04/21/21	07:00	203
04/21/21	08:00	156
04/21/21	09:00	176
04/21/21	10:00	191
04/21/21	11:00	207
04/21/21	12:00	175
04/21/21	13:00	156

04/21/21	14:00	140
04/21/21	15:00	163
04/21/21	16:00	169
04/21/21	17:00	179
04/21/21	18:00	151
04/21/21	19:00	141
04/21/21	20:00	107
04/21/21	21:00	113
04/21/21	22:00	109
04/21/21	23:00	130
04/22/21	00:00	109
04/22/21	01:00	123
04/22/21	02:00	151
04/22/21	03:00	259
04/22/21	04:00	316
04/22/21	05:00	340
04/22/21	06:00	302
04/22/21	07:00	333
04/22/21	08:00	392
04/22/21	09:00	444
04/22/21	10:00	408
04/22/21	11:00	391
04/22/21	12:00	421
04/22/21	13:00	500
04/22/21	14:00	467
04/22/21	15:00	381
04/22/21	16:00	303
04/22/21	17:00	386
04/22/21	18:00	510
04/22/21	19:00	684
04/22/21	20:00	835
04/22/21	21:00	946
04/22/21	22:00	1,079
04/22/21	23:00	1,007
04/23/21	00:00	957
04/23/21	01:00	817
04/23/21	02:00	852
04/23/21	03:00	872
04/23/21	04:00	870
04/23/21	05:00	836
04/23/21	06:00	1,019
04/23/21	07:00	1,306



Additionally, an opacity was observed on April 19, 2021 at approximately 11:25 AM from the east incinerator and lasted until 11:40 AM. Section 204-22(a) and (b) of the Rules and Regulations of the Virgin Islands Air Pollution Control Act states that no person shall discharge into the atmosphere, from any stationary source, any air contaminants with opacity equal to or greater than 20 percent for any time period except for fuel burning facilities which are allowed to discharge no more than 40 percent opacity for no more than 3 minutes in any 30 minutes period.

During normal operation, the Amine Regeneration Units (ARUs) remove H_2S from fuel gas. As a backup to the ARUs, fuel gas may be sent to the Sulfur Recover Units (SRUs) for further processing of high H_2S fuel gas. Between April 18th and April 23rd a series of inter-related issues resulted in intermittent excesses of H_2S in fuel gas and opacity from the east incinerator.

On April 18th, the No. 4 Amine Regeneration Unit (4ARU) was operating, and the No. 5 Amine Regeneration Unit (5ARU) was in the process of starting up. During the startup of 5ARU, a low-level indication was recorded from a process indicator signal for 4ARU. This resulted in an automatic shift of flow from 4ARU to 5ARU. However, since 5ARU was not yet operating optimally – due to the startup conditions – it was unable to efficiently remove the H_2S from the fuel gas.

On April 19th acid gas was being sent to 4SRU. Due to a faulty pressure transmitter at 4SRU, sulfur flow was automatically discontinued as a safety interlock. Once flow to the SRU was discontinued, there was back pressure in 5ARU and higher than normal H_2S levels in the fuel gas. Also, as a result of the loss of SRU feed, combustion parameters had to be adjusted to remedy the observed opacity at the east incinerator. Once the pressure transmitter resumed proper operation, SRU feed resumed and the H_2S in the fuel gas stabilized.

On April 22nd, again acid gas was being sent to 4SRU. This process was interrupted when 4SRU tripped and created a backpressure into the amine system. The backpressure kept 5ARU from stripping the fuel gas as designed and resulted in high H_2S levels in the fuel gas.

If you have any questions or need additional information, please contact Maria Aloyo at (340) 692-3781.

Sincerely,

Brent Woodland
Vice President of Operations
Limetree Bay Refining, LLC

Electronic Copy: Verline Marcellin (DPNR)